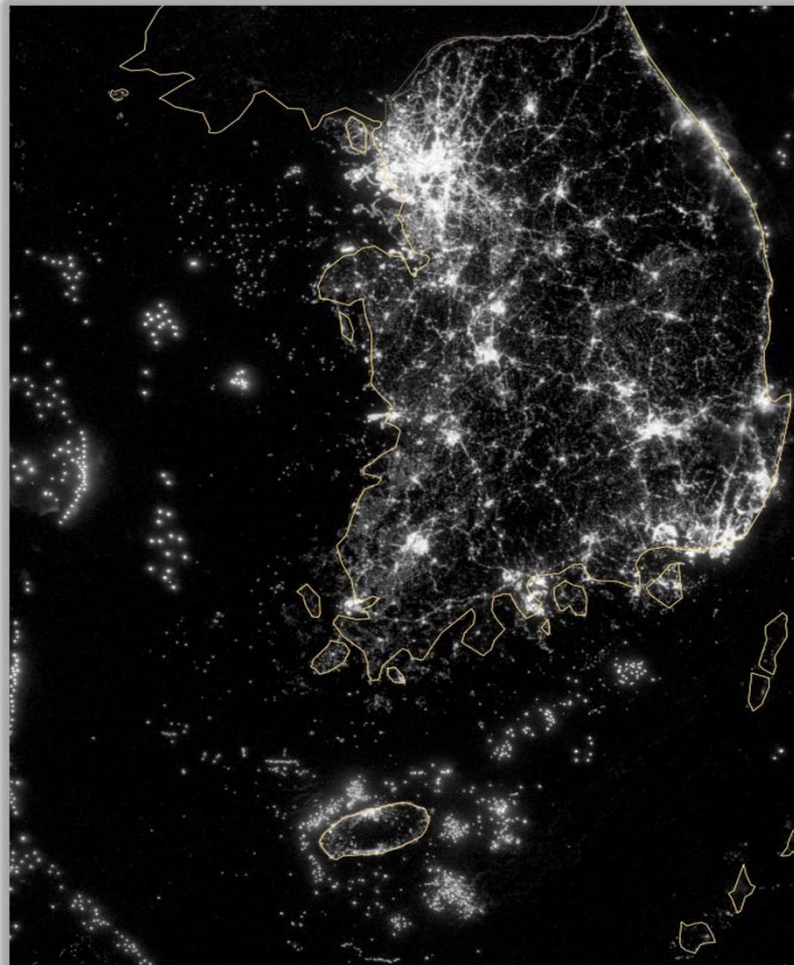


One Less Nuclear Power Plant : An Energy Initiative for the Future Generation

원전 하나
줄이기



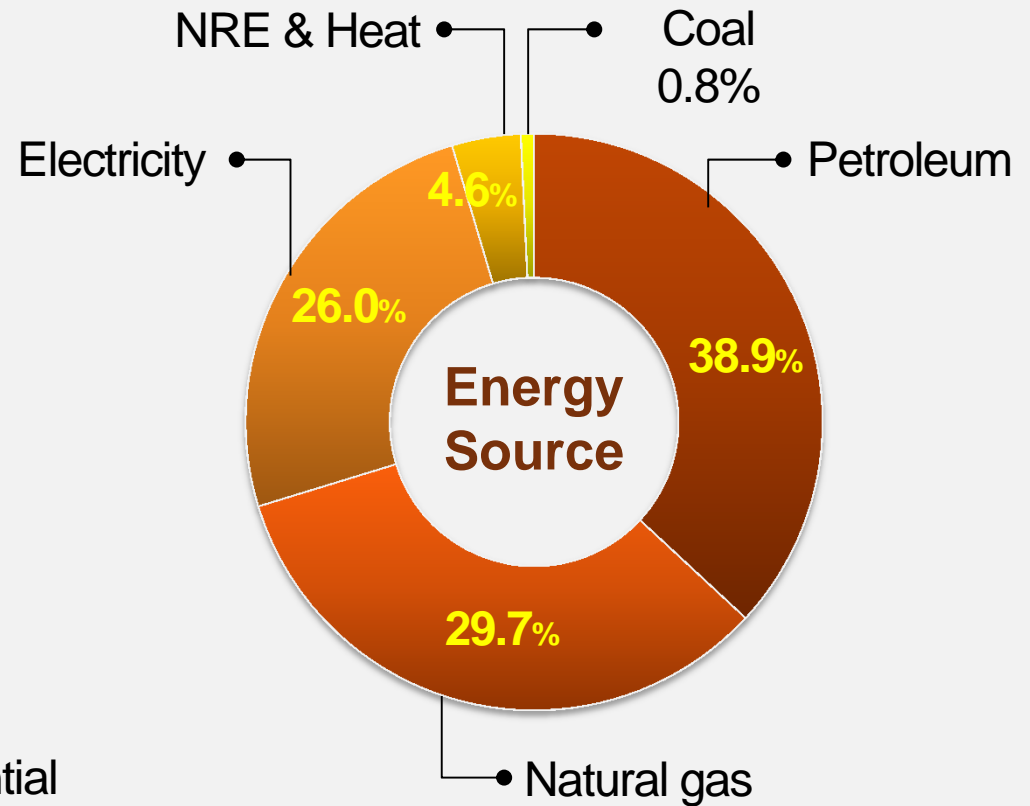
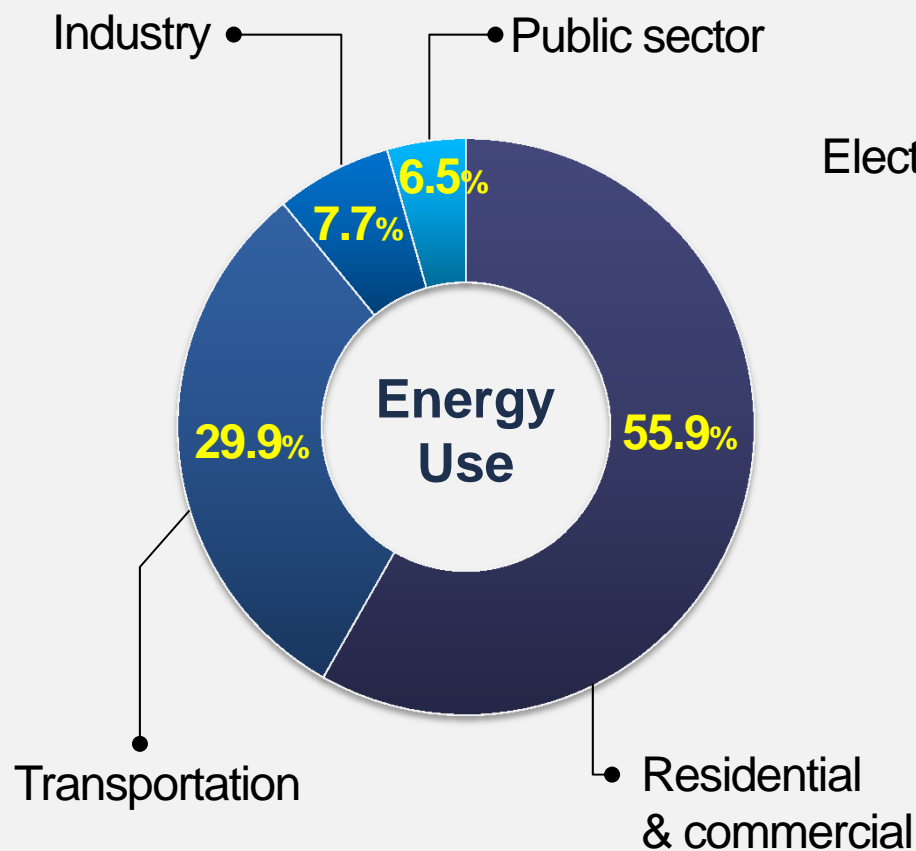
Seoul of 2013, an energy-guzzling city



**Left: Satellite image of Korea at night (2012, NASA)
Above: Bird's eye view of Seoul**

Energy consumption : 15 million TOE

“Seoul's energy consumption accounts for **7.5%** of the national total”

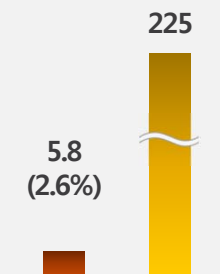


New & Renewable Energy production : 260,000 TOE

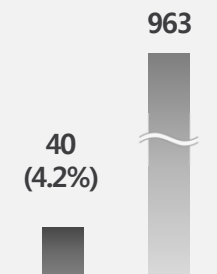
“Mere 1.6% of energy consumption in Seoul”

“Waste & Biogas 93.8%, Solar & PV 2%”

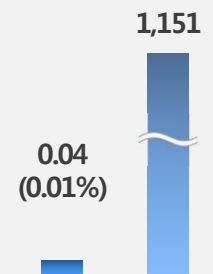
Solar & PV



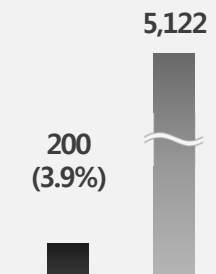
Biogas



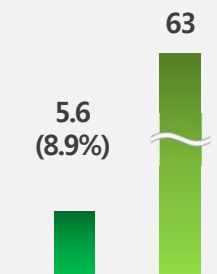
Wind



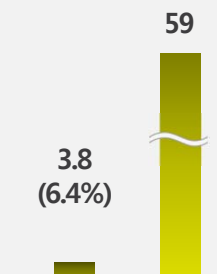
Waste



Fuel cell

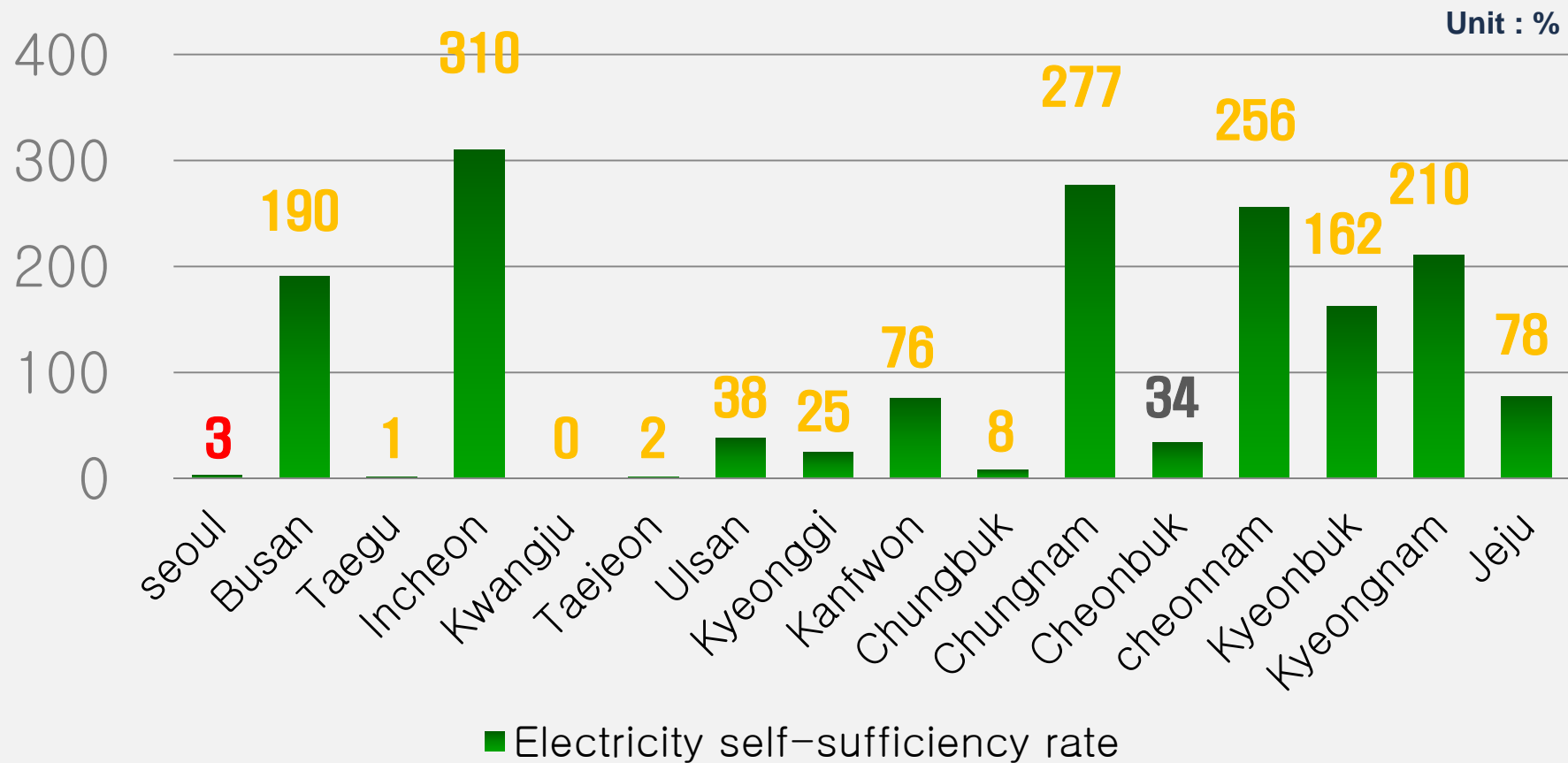


Geothermal & others



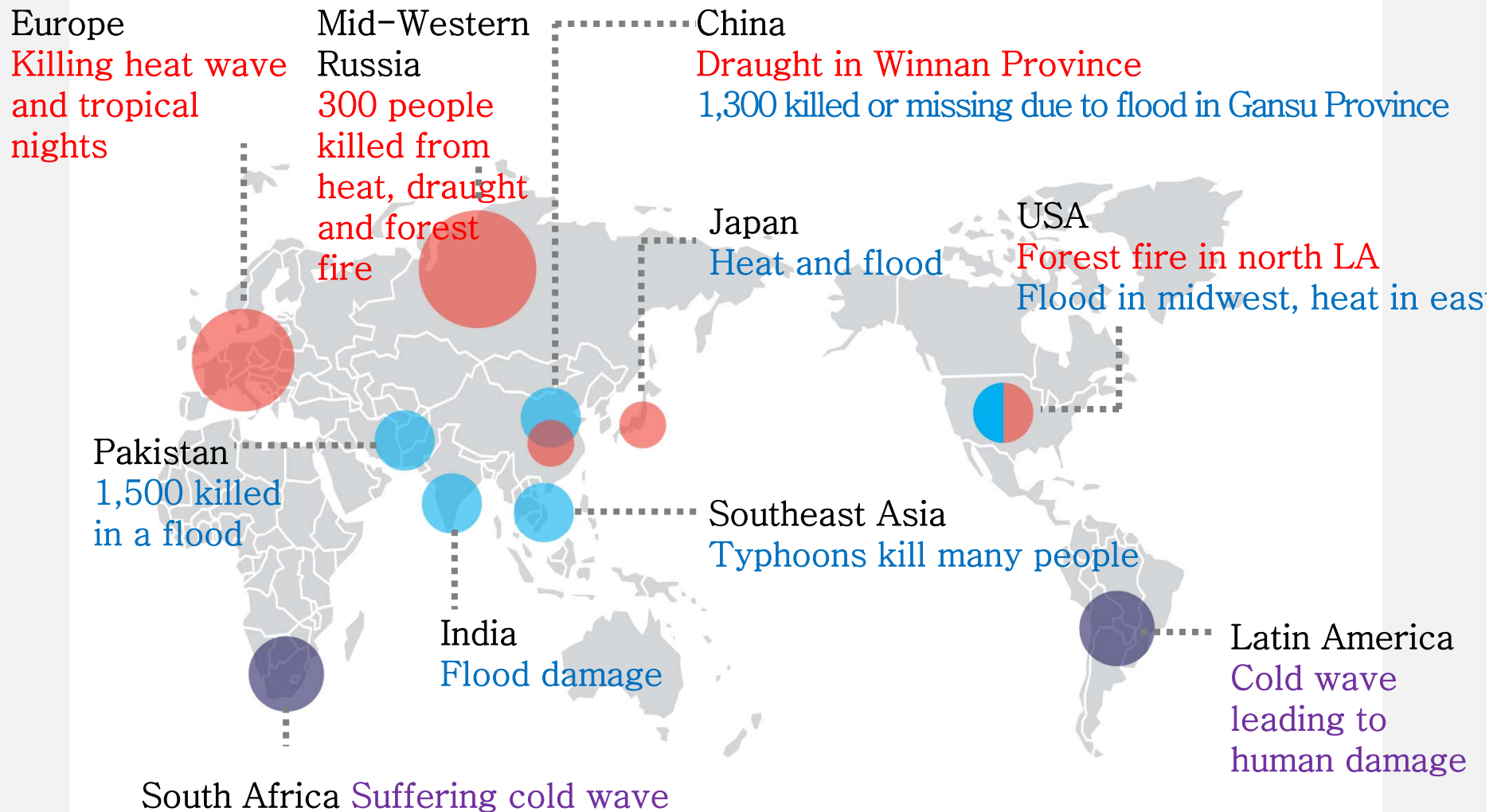
Unit : thousand TOE

Seoul's Electricity Self-Supply is Mere 3% !



Sept. 15th, 2011, Seoul, Rolling Black-Out

The Earth Suffering from Extreme Weather Events



Think globally



Act locally





**Expert
advisory
meeting**



**Grand
Public
debate**



**Public
opinion
listening
workshops**



Surveys



One Less Nuclear Power Plant means ...

“Energy initiative of Seoul to save **2 million TOE** equivalent to capacity of one nuclear unit for the future generation”





「One Less Nuclear Power Plant」
10 key action plans



Establish and operate an 10 energy foundation



01 Make Seoul a city of sunlight where the entire city is a PV plant (320 MW)



02 Ensure energy self-sufficiency of core facilities by fuel cells (230 MW)



03 Improve energy efficiency of buildings (houses, commercial buildings, schools, etc.)



04 Realize a Smart Lighting City by LED (dissemination of 8 million LED units)



05 Launch '2030 City Master Plan' with a view to energy-efficient urban structure



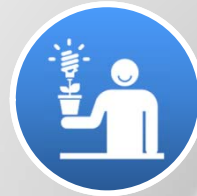
Reinforce design standards for 06 new buildings by introducing energy cap and other measures



Secure 150,000 memberships 07 for car-sharing scheme



Create 40,000 green 08 jobs in energy sector



Create citizen lifestyle with energy-saving actions 09



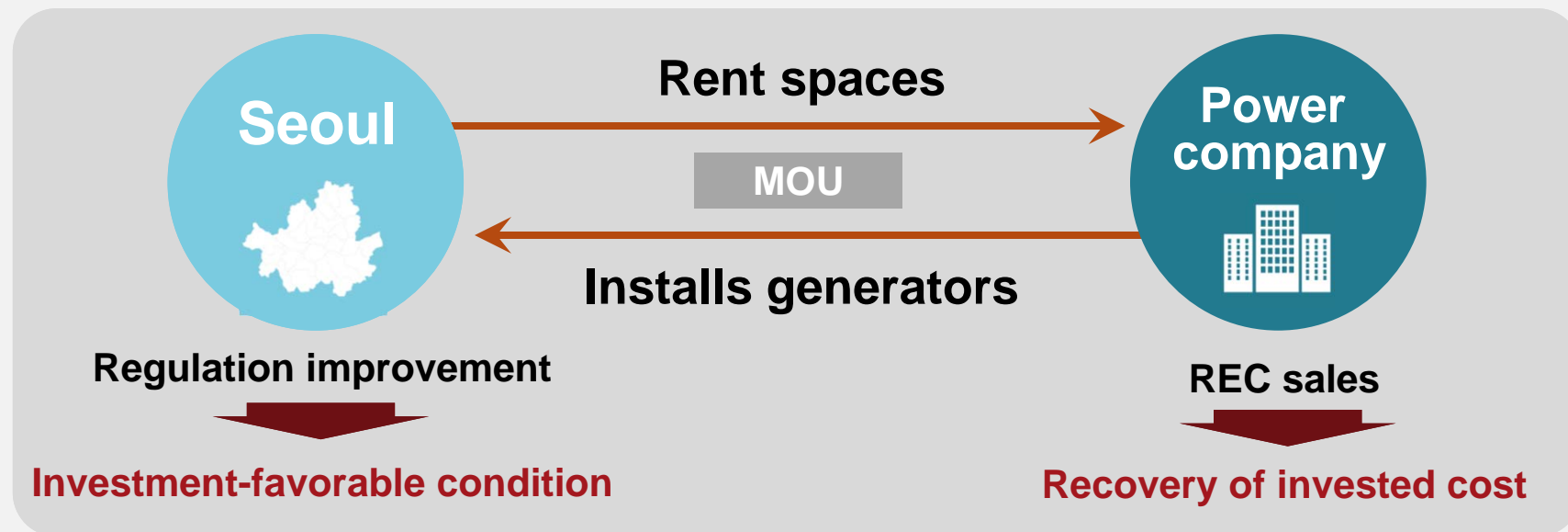
New & Renewable Energy production

PV plant

Hydro Fuel Cells

Heating Energy

- Citizens' PV plant : 290 MW by 2014
- Budget : 900 million USD





[Amsa Arisu Water Purification Center, 5MW, Completed '13.7.30]



[Guui Station, 100kW, Completion '13.6.30]



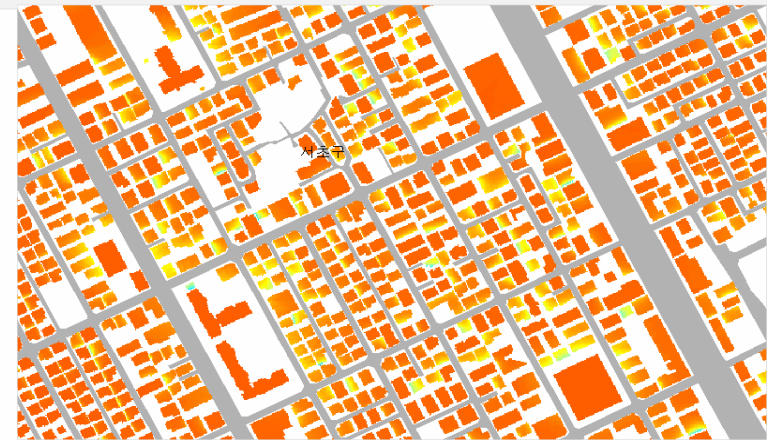
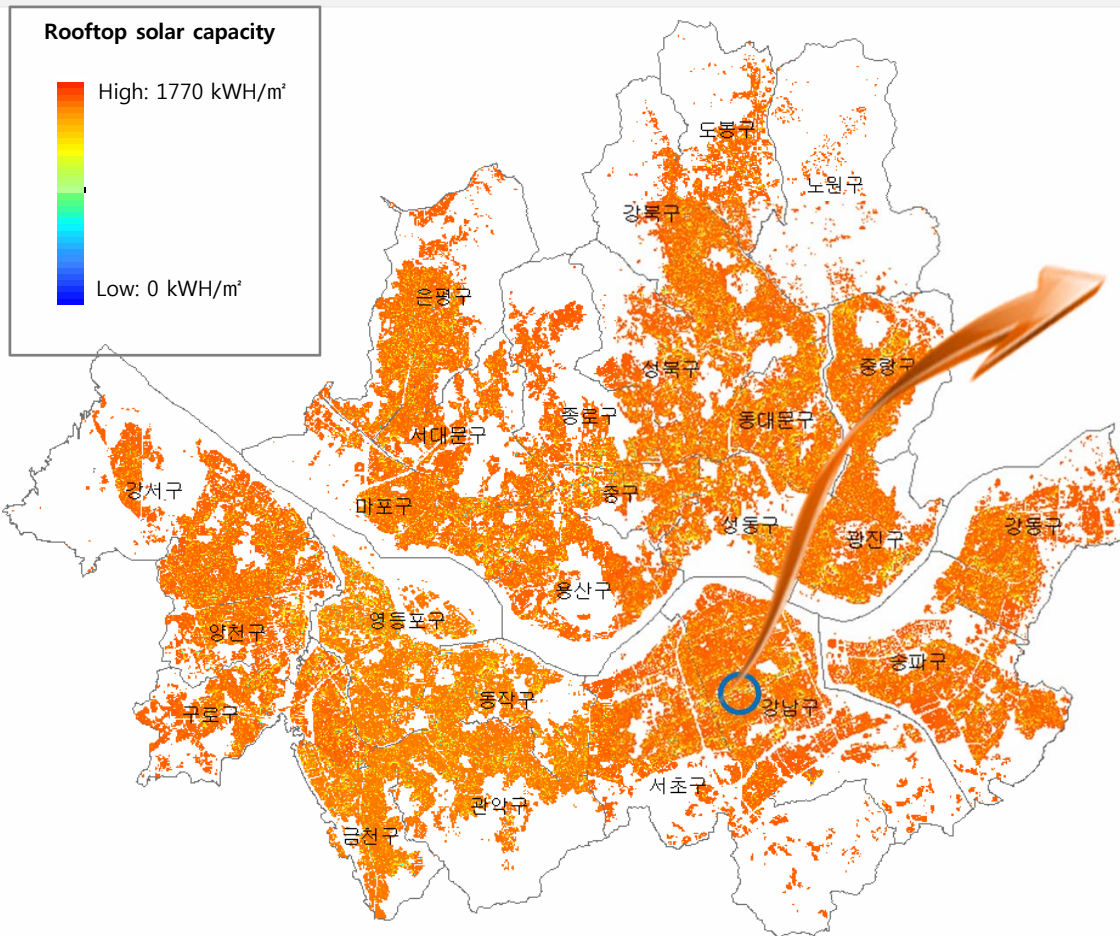
[Samgaksan High School, 20kW, Completion '13.6.14]



[Mini Solar generator, 50W]

Seoul Solar Map (<http://solarmap.seoul.go.kr/>)

“If solar panels are over every building of Seoul, they can produce enough electricity to supply the city.



Category	Potential capacity (GWh/yr)
Endowed potential capacity	731,205
Possible potential capacity	370,061
Technical Potential capacity	97,408
Available potential capacity	47,091
Electricity consumption (2011)	46,902



New & Renewable Energy production

PV plant

Hydro Fuel Cells

Heating Energy



[SH District Energy Site
Sanggye area: 2.8MW]



[Children's Grand Park: 100kW]

○ Hydro Fuel Cell power plants :
230 MW by 2014

- Maintain operation of core urban
infrastructure in emergency : 220 MW

Subway car
depots

100 MW

Sewage Treatment
Facilities

80 MW

Park etc

40 MW

- Lay the groundwork for buildings' energy
self-sufficiency: 10 MW



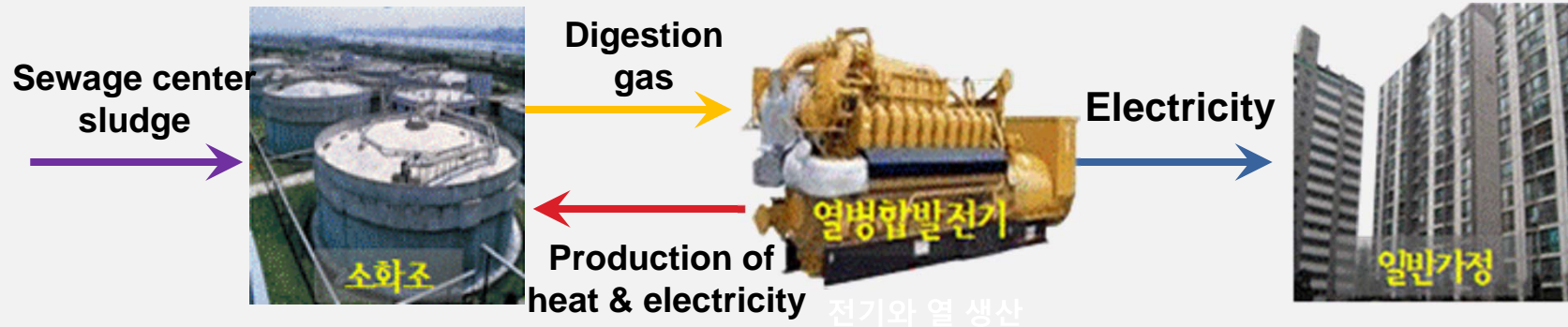
New & Renewable Energy production

PV plant Hydro Fuel Cells Heating Energy

District heating by waste water heat
30,000 TOE
by 2014

Co-generation using biogas
50,000 MWh
by 2014

Use of incineration heat and power generation heat
830,000 Gcal
by 2014



[The scheme of Co-generation using biogas]



Energy efficiency improvement

Building

LED

Transportation

Urban Planning

Existing
Buildings

Building Retrofit Program



- **Financial support**

- Interest rate : 2%

- Fund: KRW 2 billion max.

New
Buildings

Energy consumption cap



- **Tax Reduction**

- **Financial support**



Energy efficiency improvement

Building

LED

Transportation

Urban Planning



Case of energy efficiency in buildings (Seokkwan-Doosan Apartment, Seongbuk District)

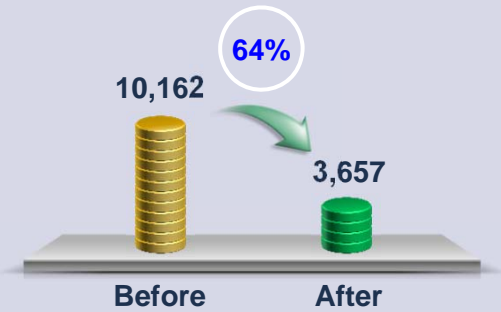


- LED-light dimming system in underground parking lot
- 9,000 USD saved per month
- Payback completed in 14 months



Energy Saved in Korea University

Electricity use (MWh/year)



Electricity bill (KRW/year)



Payback period: 6 years



Energy efficiency improvement

Building

LED

Transportation

Urban Planning







Energy efficiency improvement

Building

LED

Transportation

Urban Planning





Energy-saving citizen lifestyle

Eco-mileage



Energy Guardian Angels



Energy-Saving Model Shops



Eco-Mileage

- Membership (members)



- Energy saving (TOE)

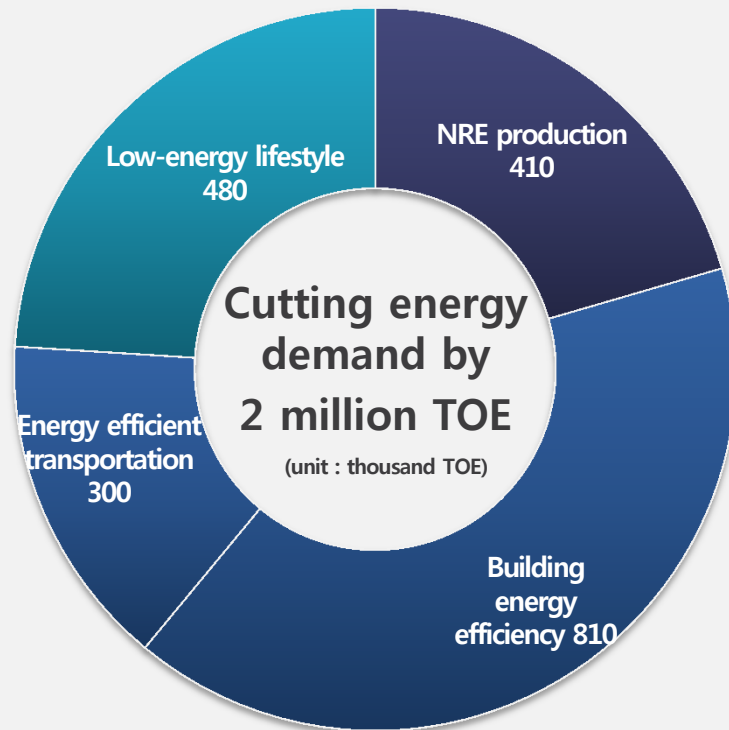


The activities of Energy Guardian Angels





Expected Gain



GHG emission reduction

6 million tCO₂

- Creating a forest of 5,827km²



Job creation : 34,000



Electricity self-sufficiency rate

8% by 2014

2011
2.8%

2014
8%

2020
20%



One Less Nuclear Power Plant!

“A beautiful investment
for the future generation”

